Reprinted from THE FEDERATION PROCEEDINGS
Vol. 22, Part I, page 456 1963

MITCHELL GLICKSTEIN and R.W. SPERRY. Univ. of Washington, Seattle, Wash. and California Institute of Technology. Visuo-motor coordination in monkeys after optic tract section and commissurotomy.

Downer (1959) reported that when the optic chiasm and corpus callosum were transected and vision restricted to one eye, monkeys showed a strong preference for the hand contralateral to the visual input; moreover, visually guided behavior was profoundly disrupted when use of the ipsilateral hand was forced. Our study was an attempt to observe visuo-motor coordination in monkeys with visual input restricted to one hemisphere by section of one optic tract. This operation, while allowing only unilateral visual projection, did not eliminate binocular cues. Five monkeys with sectioned optic tracts were tested for visuo-motor coordination in a task involving plucking bait from an eccentrically rotatin disc. The two hands were tested independently, and no differential impairment of their performance was detectable. Three of these animals were then subjected to commissurotomy and retested. Performance with the hand ipsilateral to the visual input tended to show a transient impairment as measured by latency and percentage of successes. However, the decrement did not seem to be nearly so severe as the initial "blind appearance" Downer described. The milder impairment in our animals might have been partly due to the presence of binocular depth cues.

(Supported by grant #MH06722 from National Institute of Health.)